# *Epic Games, Inc. v. Apple Inc.*

Expert Testimony of James E. Malackowski

# James E. Malackowski

- Co-Founder and CEO of Ocean Tomo LLC, an IP-focused valuation, strategy and investment banking firm

- Past President, Licensing Executives Society International, world's largest technology transfer professional association

- Current / former Board Director for leading technology firms and research organizations, including Ford Global Technologies, Inc.

- Frequent instructor for graduate studies on intellectual property management and markets

- Certified Public Accountant (CPA) and Certified Licensing Professional (CLP)
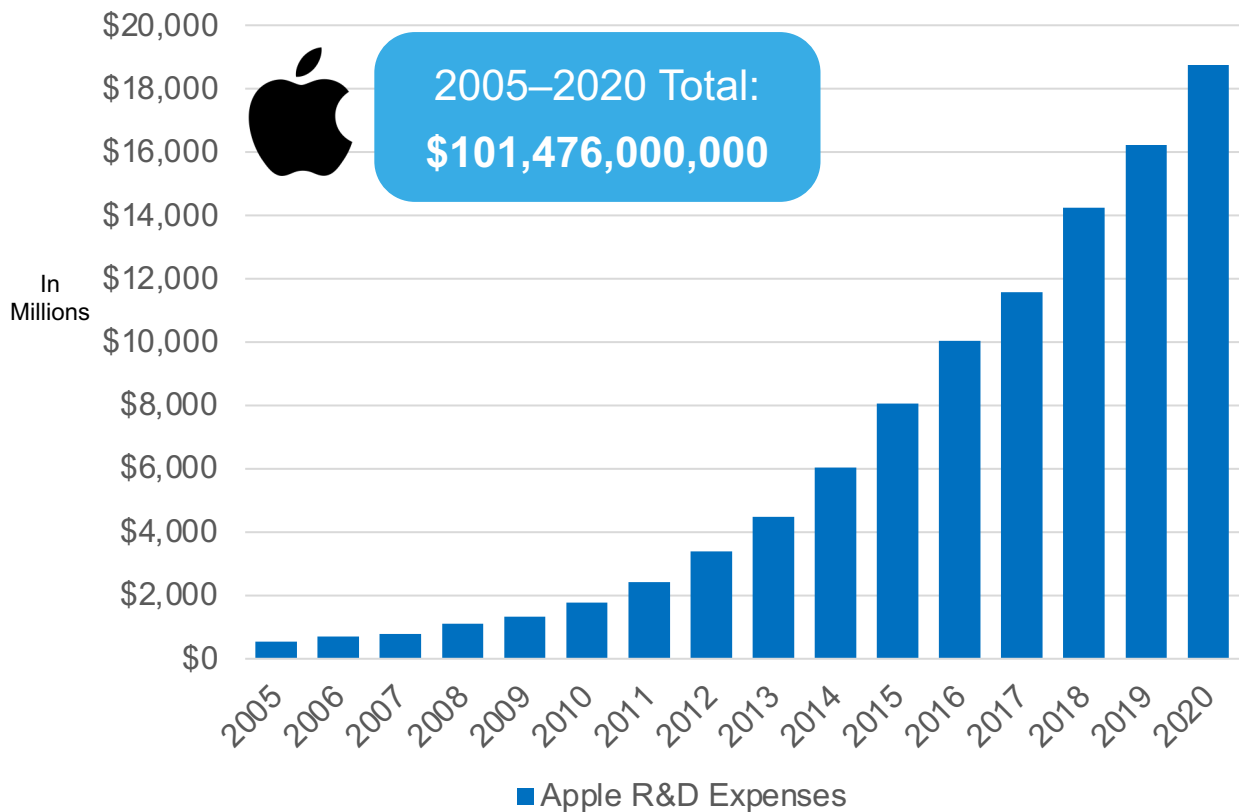
# Overview of Opinions

**1** Apple's substantial and sustained investment in research and development results in valuable IP.

**2** App developers and consumers of apps benefit from Apple's ongoing innovation and its willingness to license its exclusive IP.

**3** Epic made substantial use of Apple's licensed IP.

**4** Epic's requested remedies would result in a compulsory license without compensation to Apple for its existing IP and ongoing innovation.
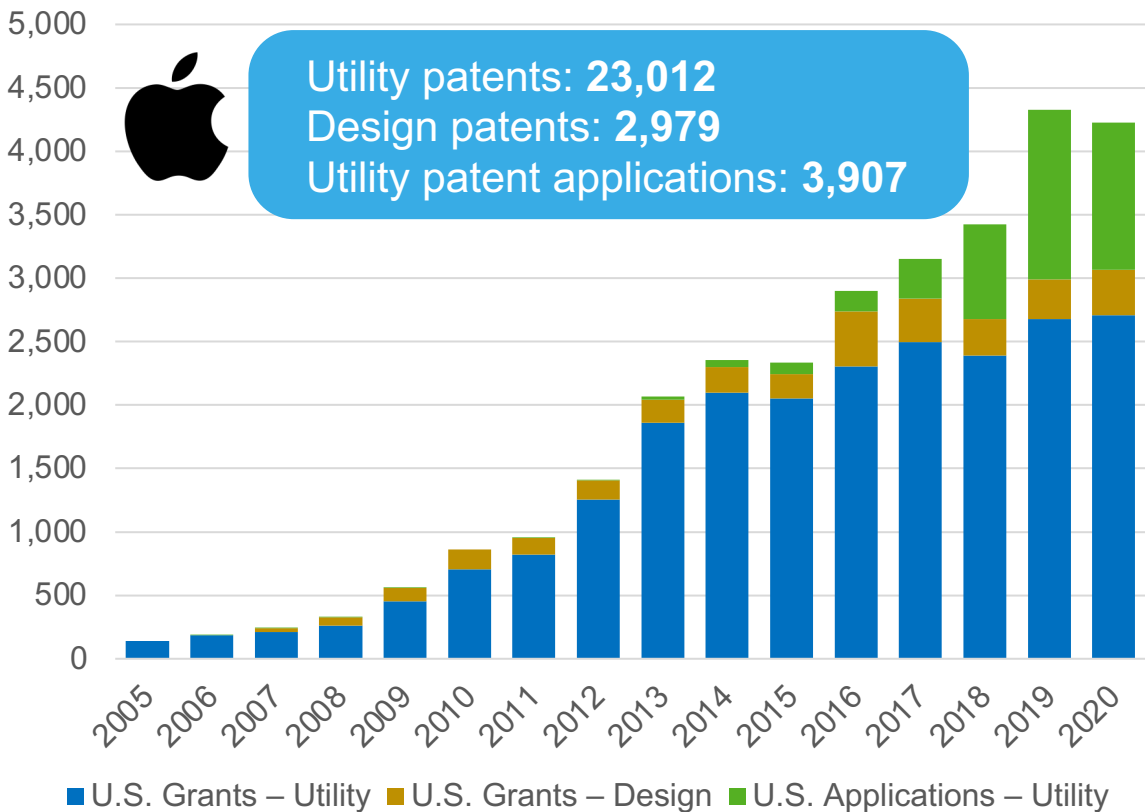
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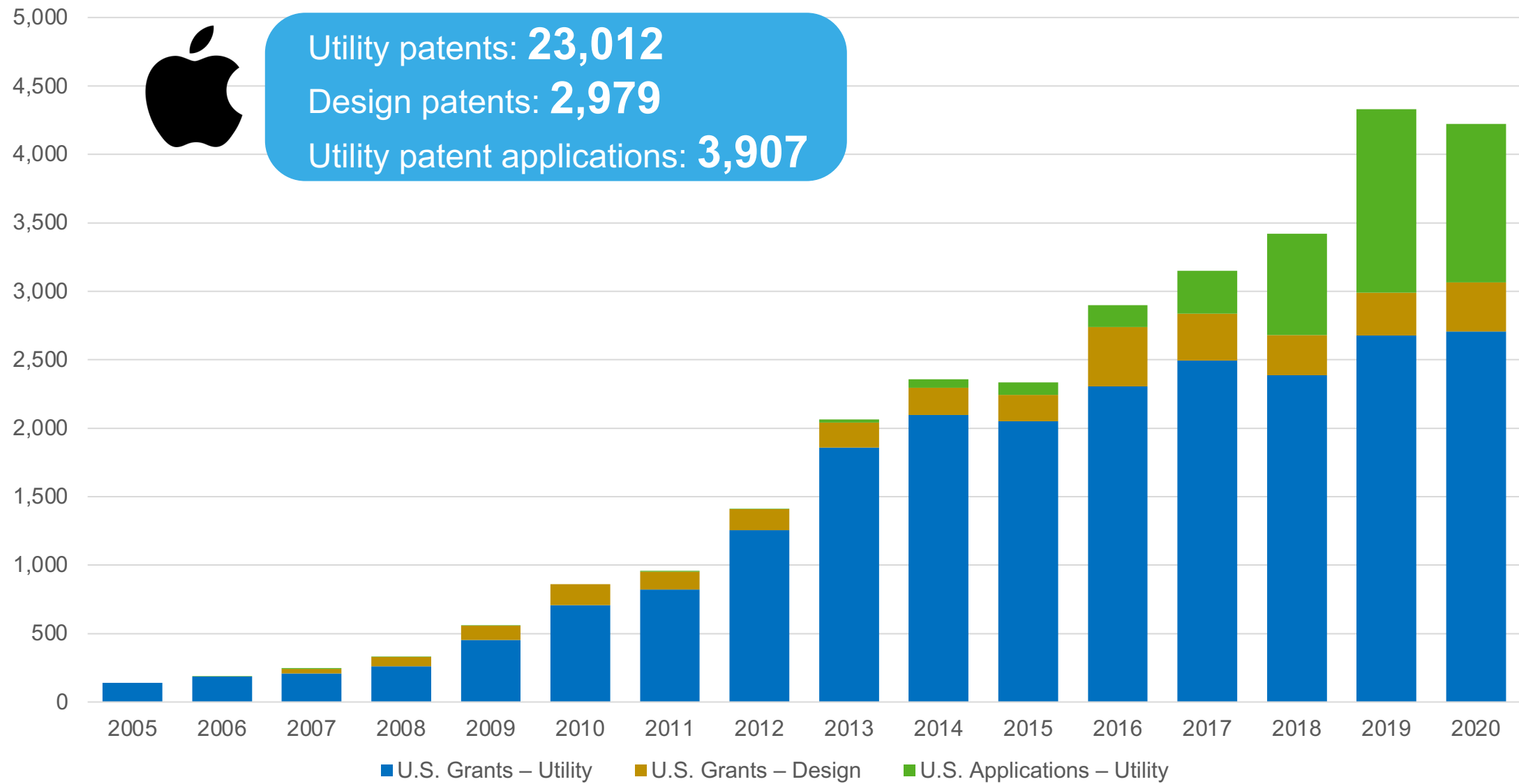
# Apple's R&D Investment and Resulting Patents

## Apple's Sustained Commitment to Research and Development

2005–2020 Total: **$101,476,000,000**

In Millions



Apple R&D Expenses

## Apple's Patent Applications and Grants Protecting Its Innovations

Utility patents: **23,012**
Design patents: **2,979**
Utility patent applications: **3,907**



U.S. Grants – Utility   U.S. Grants – Design   U.S. Applications – Utility

Apple's Investment in R&D Has Resulted in a Substantial and Growing Patent Portfolio

Utility patents: **23,012**

Design patents: **2,979**

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Legend: U.S. Grants – Utility | U.S. Grants – Design | U.S. Applications – Utility
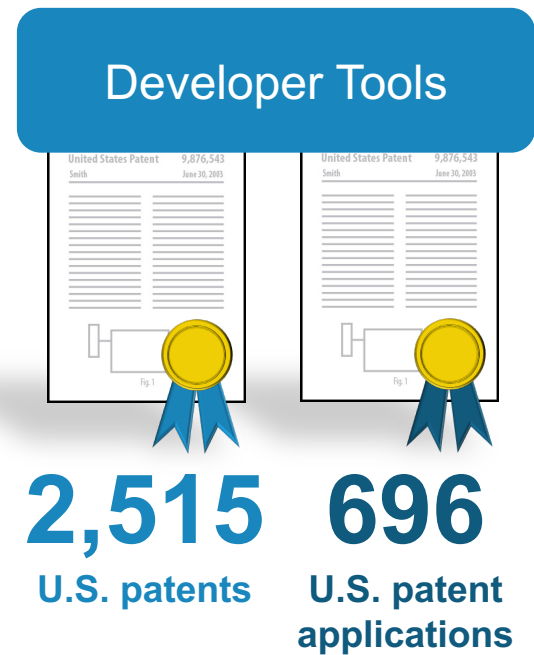
Search Database Using Terms

Test Results and Revise Terms

Search Database Using Revised Terms

Test Results and Revise Terms

Manually Review Results

# Select Technologies Covered by Apple's IP

iOS

**1,237**
**U.S. patents**

**559**
**U.S. patent applications**

App Store

**165**
**U.S. patents**

**91**
**U.S. patent applications**

Developer Tools

**2,515**
**U.S. patents**

**696**
**U.S. patent applications**

®
**~4,900**
**US copyrights**

TM
**~1,500**
**US trademarks**

# Apple Has Patents on a Variety of Software

| Search Term | U.S. Patents | U.S. Applications | Total |
|---|---|---|---|
| AirPlay [2] | 51 | 11 | 62 |
| AirPrint [3] | 4 | - | 4 |
| API [4] | 2,263 | 574 | 2,837 |
| App Store [5] | 165 | 91 | 256 |
| Apple Pay [6] | 22 | 23 | 45 |
| Architecture [7] | 79 | 67 | 146 |
| ARKit [8] | 1 | 5 | 6 |
| AudioToolbox [9] | 2 | - | 2 |
| Authentication [10] | 47 | 37 | 84 |
| Authorize/Authorization [11] | 35 | 41 | 76 |
| AVFoundation [12] | 2 | 1 | 3 |
| Business Chat [13] | - | 2 | 2 |
| CarPlay [14] | 22 | 11 | 33 |
| CloudKit [15] | 1 | 1 | 2 |
| CoreAudio [16][17] | 41 | 4 | 45 |
| CoreGraphics [17][18] | 79 | 7 | 86 |
| CoreVideo [17][19] | 20 | 1 | 21 |
| CoreMedia [20] | 26 | 4 | 30 |
| CoreMotion [21] | 4 | 1 | 5 |
| CoreML [22] | - | 1 | 1 |
| Face ID [23] | 18 | 9 | 27 |
| Foundation [24] | 26 | 5 | 31 |
| Framebuffer and Security [25] | 8 | 7 | 15 |
| GameController [26] | 6 | 2 | 8 |
| GameKit [27] | 1 | - | 1 |
| HealthKit [28] | 3 | 3 | 6 |
| HomeKit [29] | 11 | 7 | 18 |
| iAD [30] | 4 | 1 | 5 |

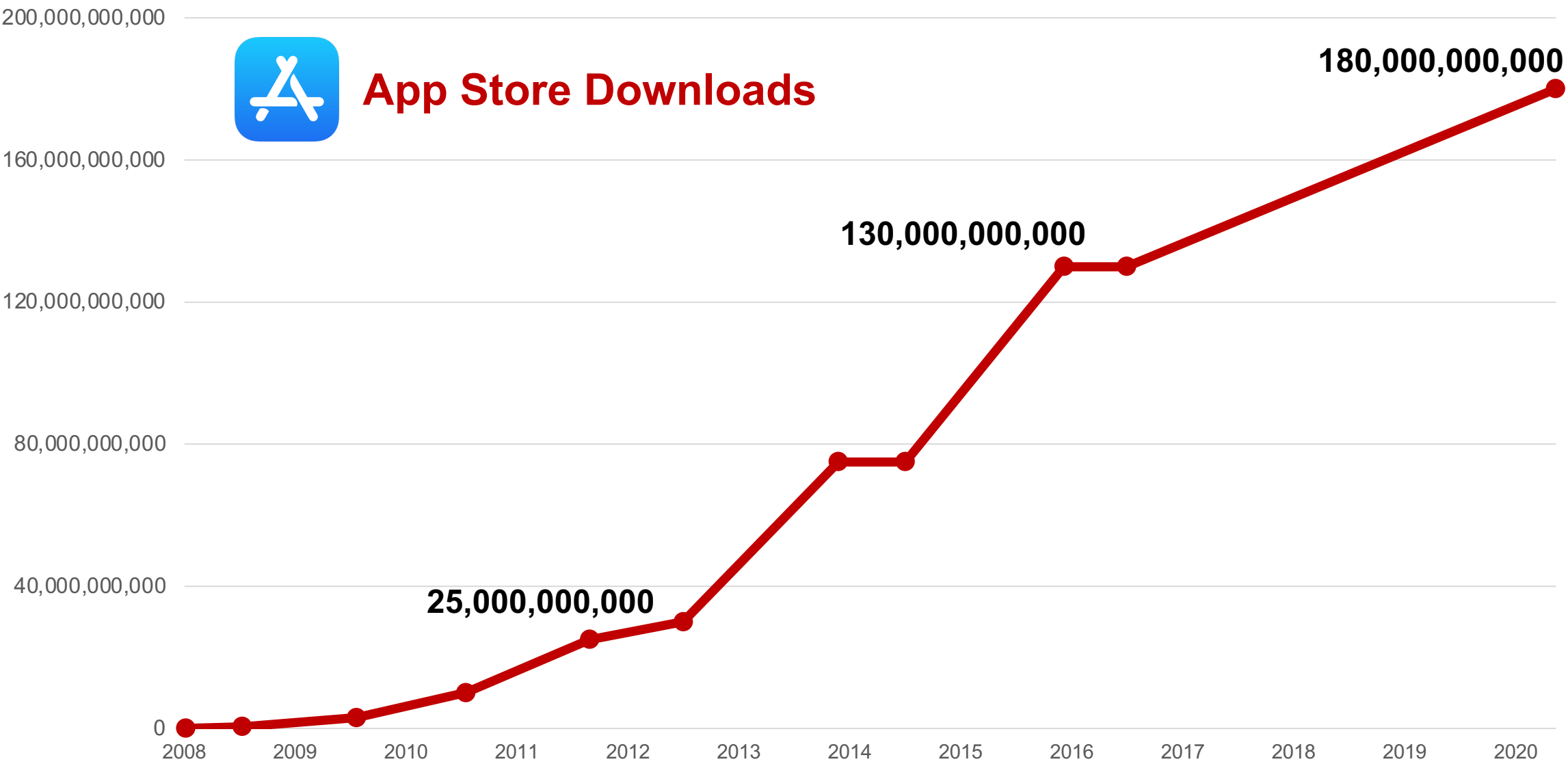| Search Term | U.S. Patents | U.S. Applications | Total |
|---|---|---|---|
| In-App Purchase [31] | 5 | 12 | 17 |
| Messages Extension [32] | 12 | 5 | 17 |
| Metal [33] | 11 | 4 | 15 |
| MultipeerConnectivity [34] | - | 1 | 1 |
| Network Extension [35] | 7 | 11 | 18 |
| PassKit [36] | - | 1 | 1 |
| Push Notification [37] | 71 | 27 | 98 |
| Quartz [38] | 22 | 1 | 23 |
| QuartzCore [39] | 5 | - | 5 |
| SDK [40] | 67 | 31 | 98 |
| StoreKit [41] | 1 | 1 | 2 |
| Subscription Service [42] | 10 | 15 | 25 |
| Touch ID [43] | 25 | 25 | 50 |
| UIKit [44] | 22 | 6 | 28 |
| UserNotifications [45] | 12 | 3 | 15 |
| WebKit [46] | 52 | 10 | 62 |
| Widgets [47] | 61 | 52 | 113 |
| Xcode [48] | 31 | 15 | 46 |

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# Exponential Growth in Available Apps



Between 2010 and 2020, the number of available apps in the App Store increased by **500%**

1,800,000

350,000+

500

2008  2009  2010  2011  2012  2013  2014  2015  2016  2017  2018  2019  2020
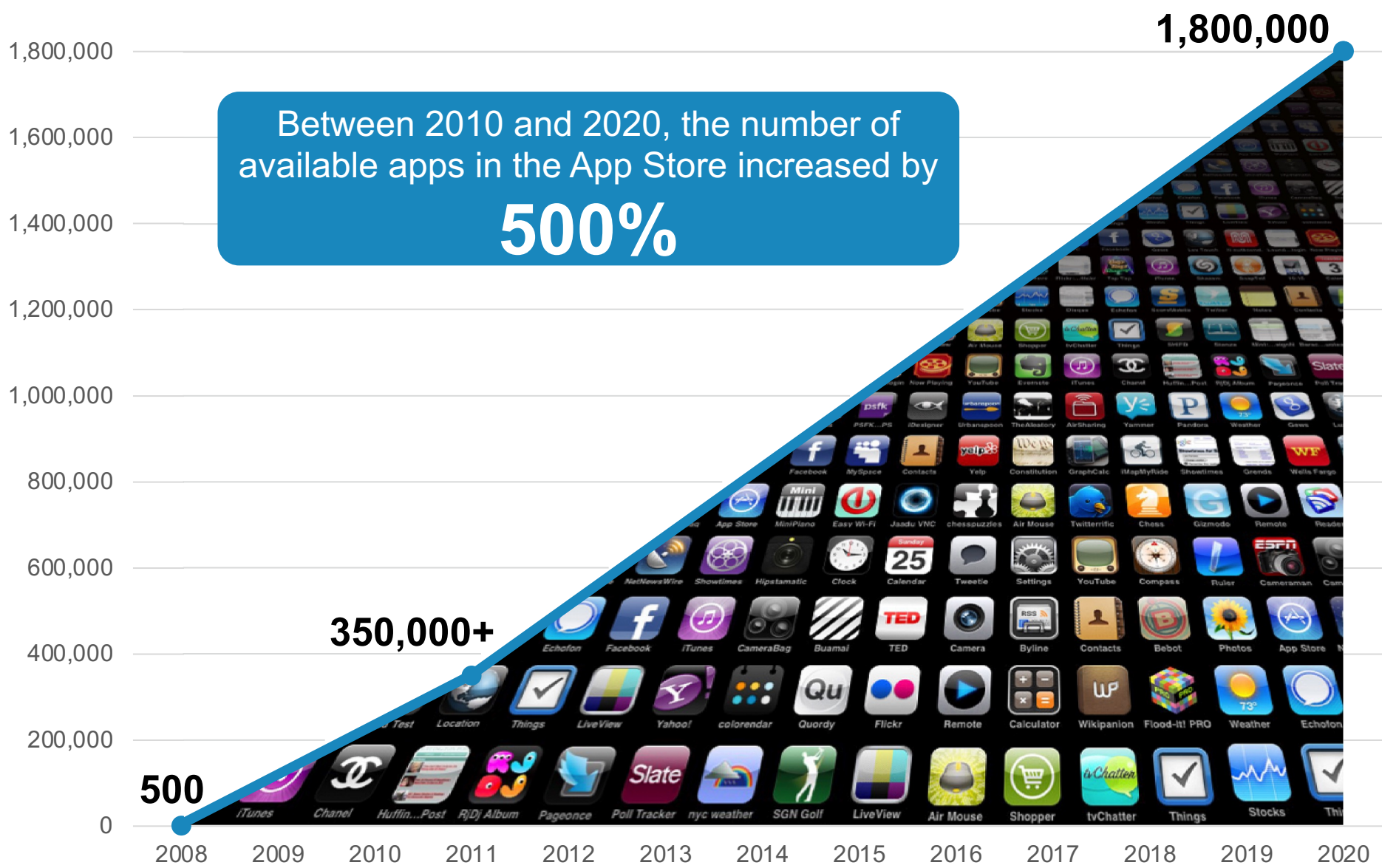
# Dramatic Growth in Consumer Adoption



App Store Downloads

180,000,000,000

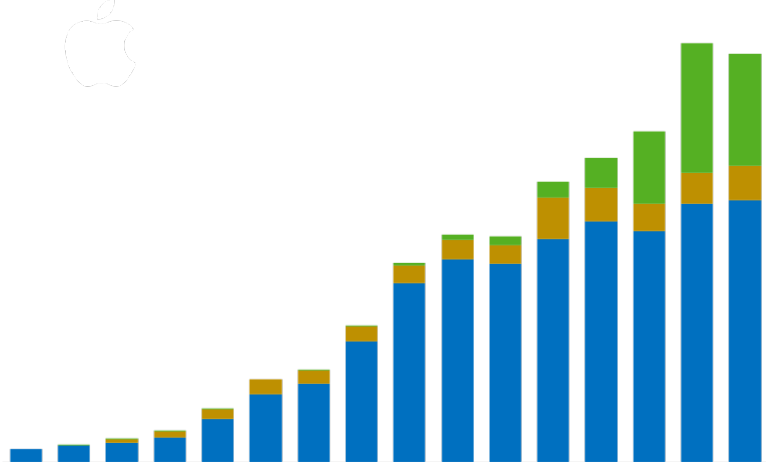130,000,000,000

25,000,000,000

# Apple's Investment in R&D Dramatically Increases Innovation and Output

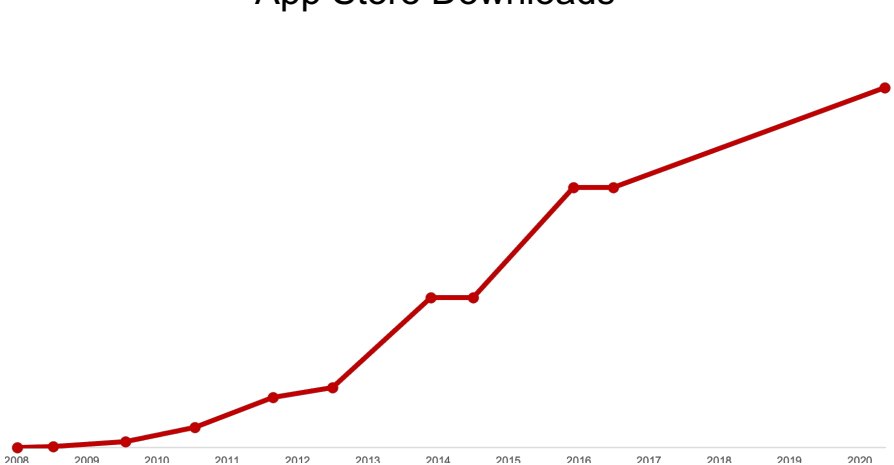### Apple's Research and Development
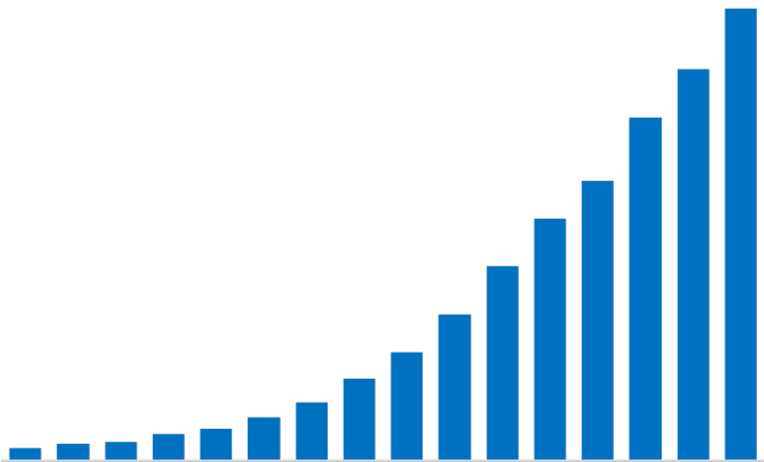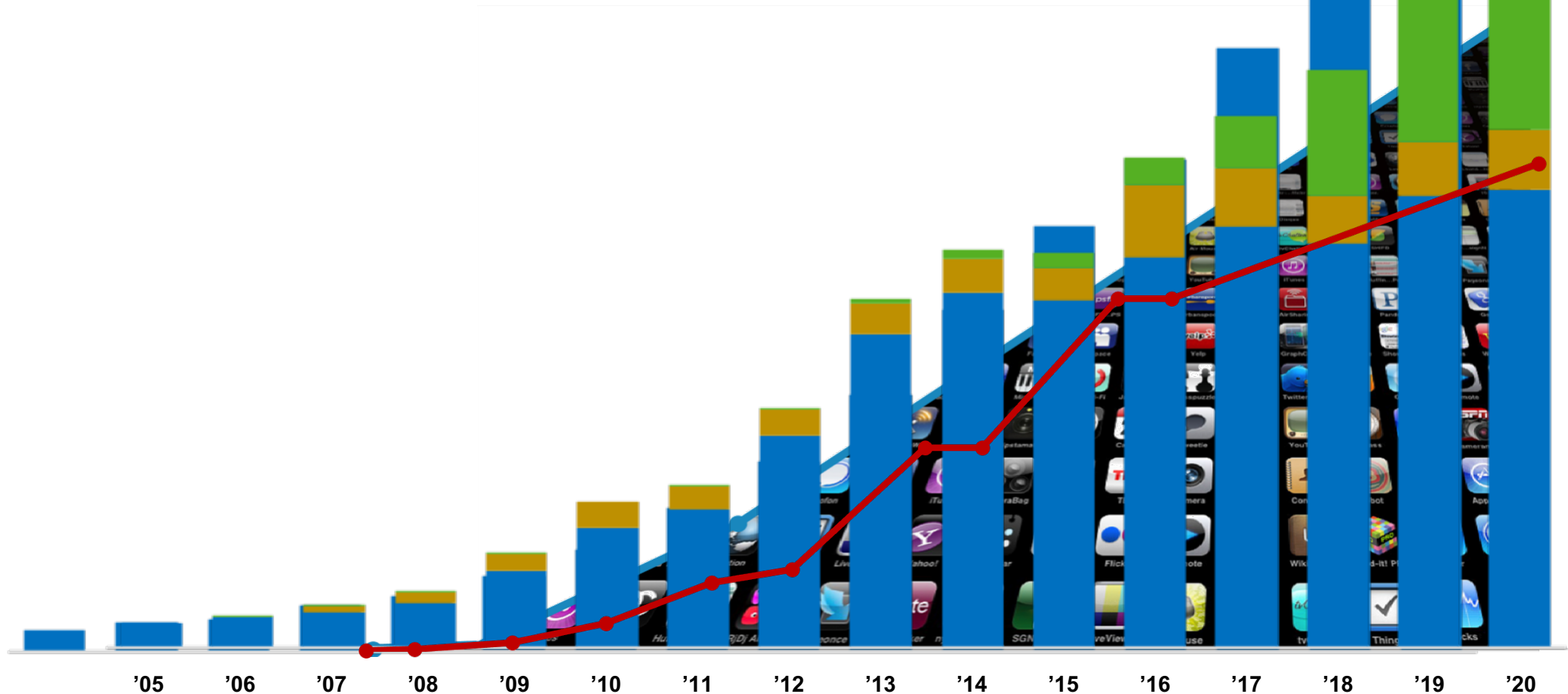


### Apple's Patent Applications and Grants
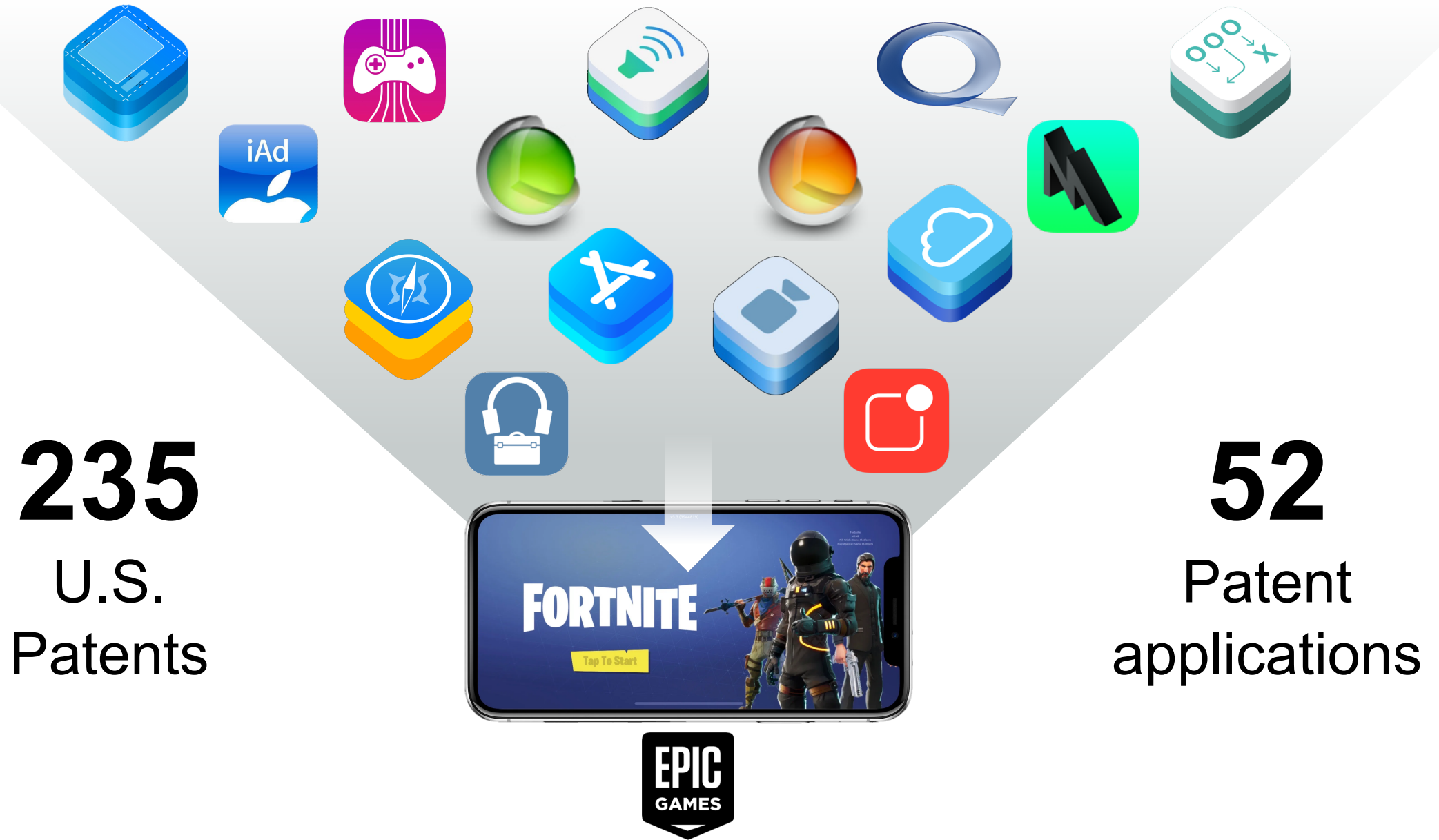


### Available App Store Apps



### App Store Downloads

# Apple's Investment in R&D Dramatically Increases Innovation and Output

'05  '06  '07  '08  '09  '10  '11  '12  '13  '14  '15  '16  '17  '18  '19  '20

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**235**

U.S. Patents

**52**

Patent applications

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